REMARKS

Claim 11 has been amended.

In the Office Action under reply, claims 11-13 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Ito et al. ("Ito") (JP 2003-139298) in view of Kanazawa (JP 59-197546). Claim 14 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Ito in view of Kanazawa, and further in view of Dickman et al. ("Dickman") (US Patent Application Publication No. US2001/0049038 A1). With respect to Applicant's claims, as amended, these rejections are respectfully traversed.

Applicant's independent claim 11 has been amended to better define Applicant's invention. More particularly, amended claim 11 recites an electronic device capable of detecting a residual capacity of a fuel cell device, the fuel cell device including a tank section for accommodating a first hydrogen storage alloy having a first hydrogen desorbing characteristic and a second hydrogen storage alloy having a second hydrogen desorbing characteristic which is different from the first hydrogen desorbing characteristic, and a power generating section for generating electric power by using hydrogen desorbed from the tank section, comprising: a pressure detecting unit for detecting a pressure of the hydrogen supplied to the power generating section, the pressure detecting unit detects a first pressure equilibrium state of the first hydrogen desorbing characteristic and a second pressure equilibrium state of the second hydrogen desorbing characteristic; a residual amount detecting unit for detecting a residual hydrogen amount by using the first pressure equilibrium state or the second pressure equilibrium state which are detected by the pressure detecting unit; and a control unit which operates with the electric power supplied from the power generating section. Such a construction is not taught or suggested by the cited art of record.

In accordance with the present invention, as recited in Applicant's amended claim 11, a characteristic feature of the claimed electronic device is the pressure detecting unit that detects a first pressure equilibrium state of the first hydrogen desorbing characteristic and a second pressure equilibrium state of the second hydrogen desorbing characteristic, and the residual amount detecting unit that detects a residual hydrogen amount by using the first pressure equilibrium state or the second pressure equilibrium state which are detected by the pressure detecting unit.

In accordance with the claimed invention, since both a first hydrogen storage alloy having a first hydrogen desorbing characteristic and a second hydrogen storage alloy having a second hydrogen desorbing characteristic which is different from the first hydrogen desorbing characteristic are accommodated in the tank section, the pressure detecting unit is able detect the first pressure equilibrium state or the second pressure equilibrium state that is caused on the basis of the first and second hydrogen desorbing characteristics, such as shown in Fig. 6 of the drawings of the present application and as discussed on pages 16-17 of the specification of the application. As shown in Fig. 6, the durations of the first and second pressure equilibrium states, represented by references 451 and 453 in Fig. 6, can be adjusted by changing the mixing ratio of the first hydrogen storage alloy and the second hydrogen storage alloy. Accordingly, by detecting such pressure equilibrium states in accordance with the present invention, residual amount detection of the stored hydrogen, in accordance with the usage of the fuel cell device, becomes feasible. As illustrated below, these features of Applicant's claimed invention are neither disclosed nor suggested in the cited art.

Ito discloses a hydrogen storage device and hydrogen amount detection method that includes a hydrogen storage alloy MH in a storage tank 3 and another kind of hydrogen storage

alloy MH1 in a tank 4 that is used to detect a remaining amount of hydrogen. As disclosed in Ito, since alloy MH1 has larger pressure changes for a hydrogen storage amount, particularly in the Plateau region of a pressure-composition-temperature curve, than that of alloy MH, the remaining amount of hydrogen can be estimated by monitoring a pressure sensor that detects the pressure of tank 4, provided that the flow rate ratios of hydrogen gases from the respective tanks are controlled to be the same as that of the amounts of the alloys filled in the tanks.

However, and unlike Ito, Applicant's claimed invention pertains to an electronic device that entails two kinds of alloys in a single tank section and detects the amount of residual hydrogen by using either the first pressure equilibrium state or the second pressure equilibrium state that are caused on the basis of the first and second hydrogen desorbing characteristics. Ito, quite differently, employs separate tanks 3 and 4 and fills different kinds of alloys in those separate tanks and thereafter detects the residual hydrogen amount only based on the pressure of alloy MH1 in tank 4. Hence, Ito lacks Applicant's recited features of a single tank section for accommodating first and second hydrogen storage alloys that have different desorbing characteristics and Ito further lacks the functions carried out by Applicant's recited pressure detecting unit and Applicant's residual amount detecting unit. As for pressure sensor 19 in Ito, which senses the pressure for tank 3, such pressure sensor is used solely for purposes of flow control and is not related in any way to detecting the residual hydrogen amount.

Kanazawa discloses a hydrogen storage method that entails using a mixture of hydrogen storage alloys so that the relationship between the storage amount of the hydrogen storage alloys and an equilibrium pressure remains linear. A mixture ratio of the different alloys is adjusted to achieve the linear relationship between the storage amounts of the hydrogen storage alloys (H/M) and their equilibrium pressure. Kanazawa, however, neither discloses nor

suggests the above-recited features of Applicant's claimed invention, namely, detecting a residual hydrogen amount by using pressure equilibrium states that are caused on the basis of the first and second hydrogen desorbing characteristics of the first and second hydrogen storage alloys.

Therefore, neither Ito nor Kanazawa discloses the above-described features of Applicant's independent claim 11. Hence, Applicant's amended claim 11, and the dependent claims, thus patentably distinguish over Ito in combination with Kanazawa. In addition, Dickman, which was cited against claim 14, adds nothing to change this conclusion.

In view of the above, it is submitted that Applicant's claims, as amended, patentably distinguish over the cited art of record. Accordingly, reconsideration and allowance of the application and claims is respectfully requested.

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Respectfully submitted,

COWAN, LIEBOWITZ & LATMAN, P.C.
1133 Avenue of the Americas
New York, NY 10036-6799
T (212) 790-9200

Mark Montague
Reg. No. 36,612